Types 66R and 66RR Low-Pressure Relief Valves



TYPE 66R RELIEF VALVE



TYPE 66RR RELIEF VALVE

***Figure 1**. Typical Constructions*

Introduction

Types 66R and 66RR low-pressure throttling relief valves[1] are used to help protect a system against overpressure, or to maintain an inlet or backpressure. The standard Type 66R direct-operated construction is used for 2-inches w.c. to 2 psig (5 mbar to 0,14 bar) set pressure ranges, while the standard Type 66RR pilot-operated construction with Type Y695RR pilot is used for 4-inches w.c. to 4.5 psig (10 mbar to 0,31 bar) set pressure ranges. However, higher set pressure ranges are available with optional springs, diaphragm plates, and other internal parts.

Standard Type 66R relief valves have internal registration through a stem guide (Figure 2) that reduces the need for control line piping, while cast iron body Type 66R relief valves additionally are available with a sealing diaphragm and a tapped connection boss on the diaphragm case for external registration that requires a separate control line. All Type 66RR relief valves come standard with internal registration in the main valve body and tapped connection bosses on the pilot casings for external registration that requires a separate control line.

Features

- **Seat Protection without Sacrifice in Shutoff Capability**—Retainer (Figure 2) in standard valve plug assembly closes against seat ring before assembly can overtravel and thus overcompress O-ring.
- **Application Flexibility**—Steel bodies are available for increased resistance to piping stresses or whenever dictated by local codes. External registration is optional with all cast iron bodies for wherever a remote control line is required. These relief valves can be used for vacuum service in both standard and special versions, since vacuum service capacity is comparable with relief service capacity.
- **Severe Service Capability**—Fluorocarbon (FKM) soft parts and stainless steel metal trim parts are available for high-temperatures and/or special gases. Optional all-metal seats lessen O-ring seat erosion problems with coke gas or other corrosive applications and have knife-edged guides on their valve plug skirts to help prevent particle accumulation with dirty service.

1. Throttling relief valve defined in ANSI standard B95.1-1972. Not all codes or regulations permit these valves to be used as final overpressure protection devices.

D100152X012

Specifications

Body Sizes and End Connection Styles

TYPES	NOMINAL BODY SIZE, NPS (DN)	END CONNECTION STYLES AND RATINGS(1)	
		Standard Cast Iron Body	Optional Steel Body
66R, 66RR	2 (50)	NPT or CL125 FF flanged	NPT, CL150 RF, and CL300 RF flanged
	3, 4 (80, 100)	CL125 FF flanged	CL150 RF flanged

Maximum Relief (Inlet) Pressure(1)
Type 66R: 8 psig (0,55 bar), including build-up
Type 66RR: 10 psig (0,69 bar), including build-up

Standard Relief Set Pressure Ranges
Type 66R: See Table 1
Type 66RR: See Table 2

Orifice Sizes
NPS 2 (DN 50) Body: 2-inch (51 mm)
NPS 3 (DN 80) Body: 3-inch (76 mm)
NPS 4 (DN 100) Body: 4-inch (102 mm)

Typical Performance Curves
See Figures 3 and 4

Relief Capacities
See Tables 4 and 5

Construction Materials
Complete Relief Valve (Type 66R) or Main Valve (Type 66RR)
Body and Body Piping: Cast iron **(standard)** or steel
Spring Case: Steel
Diaphragm Case, Diaphragm Plates, Bottom Flange, Spring, and Bolting: Plated Steel
Diaphragm Spacer when Used: Zinc-plated steel
Diaphragms, and Valve Plug O-Ring and Spring Case Gasket when Used: Nitrile (NBR) **(standard)** or Fluorocarbon (FKM) (high-temperature)
Bottom Flange and Stem Gaskets: Composition
Diaphragm Case and Closing Cap Gaskets: Neoprene (CR)
Sealing Washer and Spring Case Drive Screw when Used: Carbon steel
Type Y602-10 Vent Assembly when Used: Zinc/stainless steel/Monel®
Snap Ring when Used: Bronze
Closing Cap, Adjusting Screw, and Spring Seats: Zinc
Flapper Valve when Used: Brass
Seat Ring: Bronze **(standard)** or stainless steel

Type Y695RR Pilot and Mounting Parts (Type 66RR Only)
Body: Ductile iron **(standard)** or steel
Spring Case: Cast iron
Lower Casing Assembly: Cast iron and stainless steel
Lower Diaphragm Plate, Stainless Steel Trim Only: Stainless steel
Diaphragm: Nitrile (NBR) **(standard)** or Fluorocarbon (FKM) (high-temperature)
Lower Spring Seat: Zinc-plated steel
Back Disk Spring: Stainless steel
Pressure Setting Spring: Zinc-plated or cadmium-plated steel
Orifice and Disk Holder: Stainless steel
Disk: Nitrile (NBR) **(standard)** or Fluorocarbon (FKM) (high-temperature)
Valve Stem: Stainless steel
Pusher Post: Stainless steel
Lever Assembly: Stainless steel
Mounting Bar, Fittings, and Bolting: Steel

Temperature Capabilities
Standard Elastomers
-20° to 180°F (-29° to 82°C)
High-Temperature Elastomers
0° to 350°F (-18° to 177°C)

IEC Sizing Coefficient
See Table 3

Pressure Registration
Type 66R:
Internal **(standard)** or external
Type 66RR:
External on pilot and internal in main valve

Pressure Connections
Type 66R
Control Line (if used): 3/4 NPT **standard**
Spring Case Vent: 3/4 NPT **standard** with removable Type Y602-10 vent assembly
Type 66RR
Pilot Body: 3/4 NPT **standard**
Pilot Lower Casing Assembly: 1/2 NPT **standard**
Pilot Spring Case: 1/2 NPT **standard**

1. The pressure/temperature limits in this Bulletin and any applicable ASME standard should not be exceeded.
2. Monel® is a mark owned by Special Metals Corporation.

- continued -

Specifications (continued)

Approximate Weights

NPS 2 (DN 50) Body
NPT: 50 pounds (23 kg) for Type 66R or 65 pounds (29 kg) for Type 66RR
Flanged Ends: 55 pounds (25 kg) for Type 66R or 70 pounds (32 kg) for Type 66RR
NPS 3 (DN 80) Body: 100 pounds (45 kg) for Type 66R or 115 pounds (52 kg) for Type 66RR
NPS 4 (DN 100) Body: 155 pounds (70 kg) for Type 66R or 170 pounds (77 kg) for Type 66RR

Options

Special springs and other internal parts for Type 66R set pressures from 1.5 to 5 psig (0,10 to 0,34 bar) and Type 66RR set pressures from 3.8 to 7 psig (0,01 to 0,48 bar); control line connection for cast iron Type 66R; all-metal seats for NPS 2 (DN 50) cast iron Type 66R

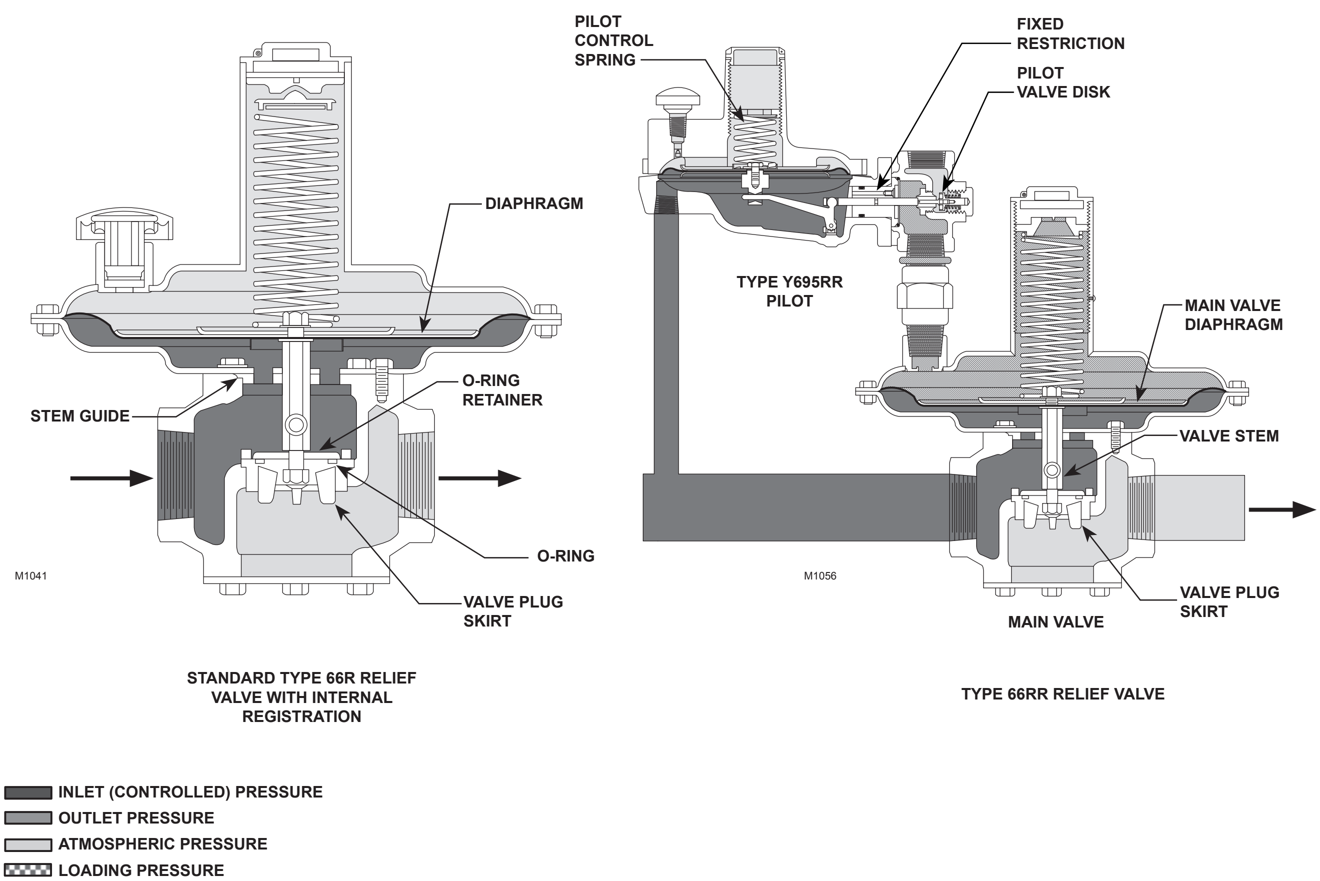


***Figure 2**. Operational Schematics*

Table 1. Spring Selection for Type 66R Relief Set Pressure Ranges

BODY SIZE, NPS (DN)	CONSTRUCTION	RELIEF SET PRESSURE RANGE	SPRING PART NUMBER	SPRING COLOR	SPRING WIRE DIAMETER, INCHES (mm)	SPRING FREE LENGTH, INCHES (mm)
2 (50)	Standard	2 to 8-inches w.c. (5 to 20 mbar) 6 to 16-inches w.c. (15 to 40 mbar) 11-inches w.c. to 1 psig (27 mbar to 0,07 bar) 0.75 to 1.5 psig (0,05 to 0,10 bar) 1 to 2 psig (0,07 to 0,14 bar)	1D765427012 1D765527012 1D765627032 1D765727032 1D765827032	Pink Stripe Blue Stripe Green Stripe Red Stripe Unpainted	0.120 (3,05) 0.138 (3,51) 0.177 (4,50) 0.207 (5,26) 0.225 (5,72)	6.00 (152) 6.00 (152) 6.00 (152) 6.09 (155) 6.00 (152)
	Special	1.5 to 3 psig (0,10 to 0,21 bar) 3 to 5 psig (0,21 to 0,34 bar)	1D962627032 1N506427142	Unpainted Black Stripe	0.262 (6,66) 0.283 (7,19)	6.25 (159) 6.31 (160)
3 (80)	Standard	2 to 8-inches w.c. (5 to 20 mbar) 6 to 16-inches w.c. (15 to 40 mbar) 11-inches w.c. to 1 psig (27 mbar to 0,07 bar) 0.75 to 1.5 psig (0,05 to 0,10 bar) 1 to 2 psig (0,07 to 0,14 bar)	1D770727012 1D770827032 1D765727032 1D765827032 1D770927032	Olive Green Stripe Red and Yellow Stripe Red Stripe Unpainted Blue and Yellow Stripe	0.135 (3,43) 0.162 (4,12) 0.207 (5,26) 0.225 (5,72) 0.283 (7,19)	6.00 (152) 6.00 (152) 6.09 (155) 6.00 (152) 6.06 (154)
	Special	1.5 to 3 psig (0,10 to 0,21 bar) 3 to 5 psig (0,21 to 0,34 bar)	1E204427032 1N506527142	White and Red Stripe Brown and Purple Stripe	0.306 (7,77) 0.363 (9,22)	6.38 (162) 6.38 (162)
4 (100)	Standard	2 to 8-inches w.c. (5 to 20 mbar) 6 to 16-inches w.c. (15 to 40 mbar) 11-inches w.c. to 1 psig (27 mbar to 0,07 bar) 0.75 to 1.5 psig (0,05 to 0,10 bar) 1 to 2 psig (0,07 to 0,14 bar)	1D771027012 1D771127032 1D527627032 1D771227032 1D771327032	Orange and Yellow Stripe Light Blue Stripe Gray and White Stripe Pink and Blue Stripe Silver Stripe	0.135 (3,43) 0.177 (4,50) 0.225 (5,72) 0.262 (6,66) 0.283 (7,19)	7.75 (197) 7.94 (202) 7.75 (197) 7.75 (197) 7.75 (197)
	Special	1.5 to 3 psig (0,10 to 0,21 bar)	1E204527032	Pink Stripe	0.331 (8,41)	7.53 (191)

Table 2. Type Y695RR Pilot Control Spring Selection

MAIN VALVE CONSTRUCTION	RELIEF SET PRESSURE RANGE	PILOT CONTROL SPRING			
		Part Number	Color Code	Wire Diameter, Inches (mm)	Free Length, Inches (mm)
Standard	4 to 9-inches w.c. (10 to 22 mbar)(1) 5 to 15-inches w.c. (12 to 37 mbar)(1) 12 to 28-inches w.c. (30 to 70 mbar)(1) 0.9 to 2.5 psig (0,06 to 0,17 bar) 1.3 to 4.5 psig (0,09 to 0,31 bar)	1B653827052 1B653927022 1B537027052 1B537127022 1B537227022	Red Cadmium Yellow Light green Light blue	0.085 (2,16) 0.105 (2,67) 0.114 (2,90) 0.156 (3,96) 0.187 (4,75)	3.625 (92,1) 3.750 (95,3) 4.188 (106) 4.060 (103) 3.938 (100)
Special	3.8 to 7 psig (0,26 to 0,48 bar)	1B537327052	Black	0.218 (5,54)	3.980 (101)

1. Published ranges are with the spring case pointed up.

Principle of Operation

Type 66R Relief Valve

Inlet pressure registers under the diaphragm and is opposed by the spring (Figure 2). When the inlet pressure increases above the spring setting, the valve plug opens in a throttling manner and relieves the inlet pressure. As inlet pressure drops back to set pressure, the spring closes the valve plug.

Type 66RR Relief Valve

Inlet pressure registers on the bottom of the pilot diaphragm through the upstream control line and bleeds through a fixed restriction in the pilot (Figure 2) to provide loading pressure that helps the main valve spring keep the main valve plug tightly shutoff. When inlet pressure exceeds the setting of the pilot spring, the pilot diaphragm moves upward, opening the pilot valve disk and relieving some of the pressure from the top of the main valve diaphragm. At the same time, the inlet pressure increase registers on the bottom of the main valve diaphragm.

The pressure differential acting on the main valve diaphragm moves this diaphragm upward, opening the main valve. Further increases in inlet pressure continue to open the pilot valve disk and the main valve plug. When inlet pressure returns to the pilot control spring setting, the pilot disk closes, allowing inlet pressure to load the top of the main valve diaphragm through the fixed restriction.

This equalizes the pressures acting on this diaphragm, and the main valve spring closes the main valve plug.

***Table 3**. IEC Sizing Coefficients*

BODY SIZE, NPS (DN)	X_T	F_D	F_L	K_m
2 (50)	0.78	0.35	0.89	0.79
3 (80)		0.34		
4 (100)		0.30		

***Table 4**. Selected Type 66R Relief Capacities in SCFH (Nm^3/h) of 0.6 Specific Gravity Natural Gas[1]*

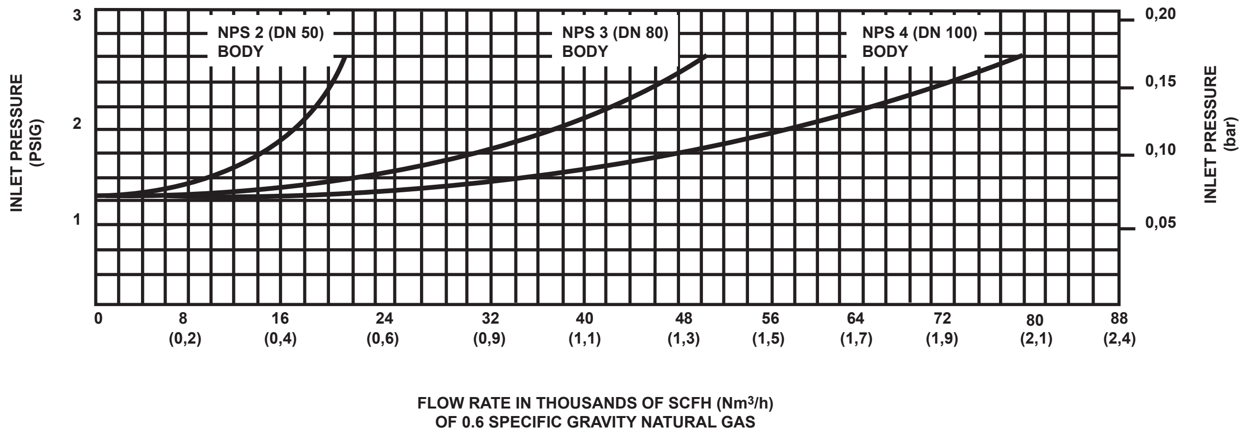
BODY SIZE, NPS (DN)	SPRING PART NUMBER	RELIEF SET PRESSURE	BUILD-UP OVER RELIEF SET PRESSURE									
			Inches w.c. (mbar)			Psig (bar)						
			1 (2)	3 (7)	5 (12)	0.25 (0,02)	0.5 (0,03)	0.75 (0,05)	1 (0,07)	1.5 (0,10)	2 (0,14)	3 (0,21)
2 (50)	1D765427012	5-inches w.c. (12 mbar)	3300 (88,4)	8500 (228)[2]	9500 (255)	10 000 (268)	12 500 (335)	- - - -	- - - -	- - - -	- - - -	- - - -
	1D765527012	10-inches w.c. (25 mbar)	- - - -	7300 (196)	10 800 (289)	12 000 (322)[2]	14 000 (375)	15 300 (410)	- - - -	- - - -	- - - -	- - - -
	1D765627032	14-inches w.c. (35 mbar)	- - - -	- - - -	8200 (220)	11 500 (308)	15 000 (402)[2]	16 800 (450)	18 500 (496)	- - - -	- - - -	- - - -
	1D765727032	1 psig (0,07 bar)	- - - -	- - - -	- - - -	7750 (208)	16 700 (448)	18 500 (496)[2]	20 000 (536)	24 000 (643)	- - - -	- - - -
	1D765827032	1.5 psig (0,10 bar)	- - - -	- - - -	- - - -	- - - -	15 000 (402)	21 000 (563)	24 000 (643)[2]	26 000 (697)	29 000 (777)	- - - -
	1D962627032	2 psig (0,14 bar)	- - - -	- - - -	- - - -	- - - -	- - - -	17 000 (456)	23 000 (616)	29 000 (777)[2]	31 000 (831)	35 000 (938)
3 (80)	1D770727012	5-inches w.c. (12 mbar)	5500 (147)	18 500 (496)[2]	20 000 (536)	22 000 (590)	27 000 (724)	- - - -	- - - -	- - - -	- - - -	- - - -
	1D770827032	10-inches w.c. (25 mbar)	- - - -	11 800 (316)	21 500 (576)	26 000 (697)[2]	31 000 (831)	34 000 (911)	- - - -	- - - -	- - - -	- - - -
	1D765727032	14-inches w.c. (35 mbar)	- - - -	- - - -	11 500 (308)	17 500 (469)	33 000 (884)[2]	36 000 (965)	40 000 (1072)	- - - -	- - - -	- - - -
	1D765827032	1 psig (0,07 bar)	- - - -	- - - -	- - - -	15 000 (402)	29 000 (777)	41 000 (1099)[2]	46 000 (1233)	52 000 (1394)	- - - -	- - - -
	1D770927032	1.5 psig (0,10 bar)	- - - -	- - - -	- - - -	- - - -	18 000 (482)	30 000 (804)	44 000 (1179)	57 000 (1528)[2]	62 000 (1662)	- - - -
	1E204427032	2 psig (0,14 bar)	- - - -	- - - -	- - - -	- - - -	- - - -	27 000 (724)	39 000 (1045)	60 000 (1608)	67 000 (1796)[2]	76 000 (2037)
4 (100)	1D771027012	5-inches w.c. (12 mbar)	10 300 (276)	28 000 (750)[2]	32 000 (858)	34 000 (911)	41 000 (1099)	- - - -	- - - -	- - - -	- - - -	- - - -
	1D771127032	10-inches w.c. (25 mbar)	- - - -	22 000 (590)	36 000 (965)	39 000 (1045)[2]	46 000 (1233)	52 000 (1394)	- - - -	- - - -	- - - -	- - - -
	1D527627032	14-inches w.c. (35 mbar)	- - - -	- - - -	24 000 (643)	35 000 (938)	50 000 (1340)[2]	55 000 (1474)	61 000 (1635)	- - - -	- - - -	- - - -
	1D771227032	1 psig (0,07 bar)	- - - -	- - - -	- - - -	21 000 (563)	50 000 (1340)	65 000 (1742)[2]	70 000 (1876)	78 000 (2090)	- - - -	- - - -
	1D771327032	1.5 psig (0,10 bar)	- - - -	- - - -	- - - -	- - - -	36 000 (965)	60 000 (1608)	78 000 (2090)	86 000 (2305)[2]	95 000 (2546)	- - - -
	1E204527032	2 psig (0,14 bar)	- - - -	- - - -	- - - -	- - - -	- - - -	40 000 (1072)	60 000 (1608)	90 000 (2412)	102 000 (2734)[2]	115 000 (3082)

1. See "Capacity Information" section for conversion to equivalent capacities of other gases and/or normal cubic meters per hour.
2. Valve wide-open

Table 5. Selected Type 66RR Relief Capacities in SCFH (Nm3/h) of 0.6 Specific Gravity Natural Gas[1]

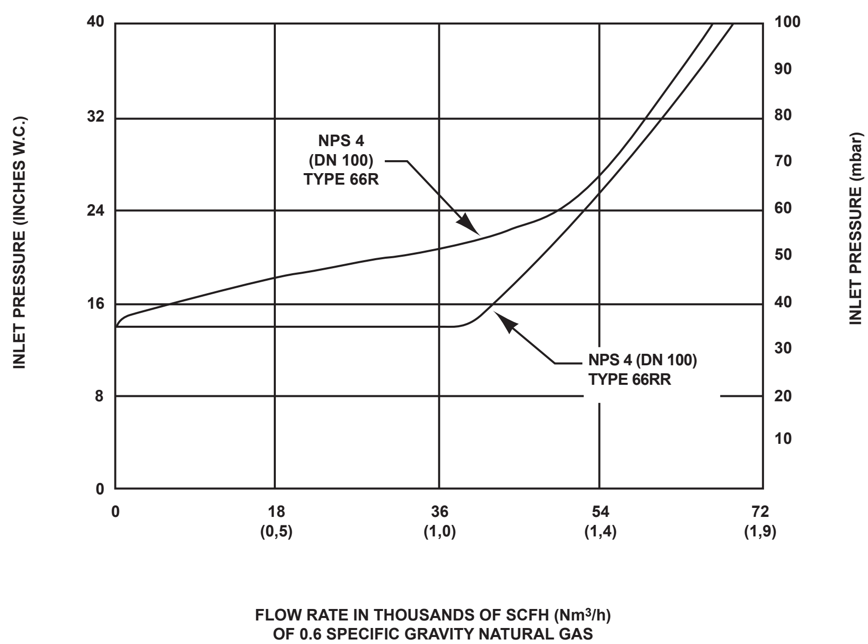
BODY SIZE, NPS (DN)	TYPE Y695RR PILOT CONTROL SPRING	RELIEF SET PRESSURE	BUILD-UP OVER RELIEF SET PRESSURE									
			Inches w.c. (mbar)			Psig (bar)						
			1 (2)	3 (7)	5 (12)	0.25 (0,02)	0.5 (0,03)	0.75 (0,05)	1 (0,07)	1.5 (0,10)	2 (0,14)	3 (0,21)
2 (50)	Red	5-inches w.c. (12 mbar)	6200 (166)[2]	7300 (196)	8250 (221)	9000 (241)	11 600 (311)	- - - -	- - - -	- - - -	- - - -	- - - -
	Cadmium	10-inches w.c. (25 mbar)	8750 (235)[2]	9550 (256)	10 200 (273)	10 800 (289)	13 000 (348)	15 100 (405)	- - - -	- - - -	- - - -	- - - -
	Yellow	14-inches w.c. (35 mbar)	10 300 (276)[2]	11 100 (297)	11 700 (314)	12 400 (332)	14 300 (383)	16 100 (431)	17 900 (480)	- - - -	- - - -	- - - -
	Light green	1 psig (0,07 bar)	14 400 (386)[2]	15 200 (407)	15 700 (421)	16 100 (431)	17 700 (474)	19 200 (515)	20 600 (552)	23 200 (622)	- - - -	- - - -
	Light green	1.5 psig (0,10 bar)	- - - -	18 000 (482)	18 500 (496)	19 000 (509)	20 500 (549)	22 000 (590)	23 500 (630)	26 000 (697)	28 000 (750)	- - - -
	Light blue	2 psig (0,14 bar)	- - - -	20 000 (536)	20 500 (549)	21 000 (563)	22 500 (603)	24 000 (643)	25 500 (683)	28 000 (750)	30 000 (804)	33 000 (884)
3 (80)	Red	5-inches w.c. (12 mbar)	15 700 (421)[2]	18 600 (498)	21 200 (568)	23 000 (616)	29 400 (788)	- - - -	- - - -	- - - -	- - - -	- - - -
	Cadmium	10-inches w.c. (25 mbar)	22 700 (608)[2]	24 800 (665)	26 600 (713)	28 400 (761)	34 000 (911)	38 700 (1037)	- - - -	- - - -	- - - -	- - - -
	Yellow	14-inches w.c. (35 mbar)	16 100 (431)[2]	28 200 (756)	29 700 (796)	31 500 (844)	36 400 (976)	42 000 (1126)	45 500 (1219)	- - - -	- - - -	- - - -
	Light green	1 psig (0,07 bar)	35 600 (954)[2]	37 200 (997)	38 200 (1024)	39 800 (1067)	44 000 (1179)	48 000 (1286)	51 500 (1380)	58 800 (1576)	- - - -	- - - -
	Light green	1.5 psig (0,10 bar)	- - - -	45 000 (1206)	46 000 (1233)	47 200 (1265)	50 000 (1340)	54 000 (1447)	56 000 (1501)	59 900 (1605)	62 000 (1662)	- - - -
	Light blue	2 psig (0,14 bar)	- - - -	51 000 (1367)	52 000 (1394)	53 300 (1428)	56 000 (1501)	59 500 (1595)	62 000 (1662)	64 000 (1715)	66 000 (1769)	72 000 (1930)
4 (100)	Red	5-inches w.c. (12 mbar)	25 500 (683)[2]	30 000 (804)	33 600 (900)	36 900 (989)	45 400 (1217)	- - - -	- - - -	- - - -	- - - -	- - - -
	Cadmium	10-inches w.c. (25 mbar)	35 100 (941)[2]	38 200 (1024)	41 300 (1107)	43 800 (1174)	52 600 (1410)	59 800 (1603)	- - - -	- - - -	- - - -	- - - -
	Yellow	14-inches w.c. (35 mbar)	41 300 (1107)[2]	43 800 (1174)	46 500 (1246)	49 000 (1313)	56 700 (1520)	66 500 (1782)	70 600 (1892)	- - - -	- - - -	- - - -
	Light green	1 psig (0,07 bar)	57 400 (1538)[2]	59 300 (1589)	62 000 (1662)	63 200 (1694)	65 000 (1742)	67 700 (1814)	77 800 (2085)	90 000 (2412)	- - - -	- - - -
	Light green	1.5 psig (0,10 bar)	- - - -	64 400 (1726)	66 900 (1793)	67 900 (1820)	69 500 (1863)	72 000 (1930)	86 000 (2305)	93 000 (2492)	96 000 (2573)	- - - -
	Light blue	2 psig (0,14 bar)	- - - -	69 500 (1863)	72 000 (1930)	73 000 (1956)	74 600 (1999)	77 000 (2064)	90 000 (2412)	95 000 (2546)	100 000 (2680)	110 000 (2948)

1. See “Capacity Information” section for conversion to equivalent capacities of other gases and/or normal cubic meters per hour. Shaded capacities are approximate.
2. Valve wide-open



NOTE:
SEE "CAPACITY INFORMATION" SECTION FOR CONVERSION TO EQUIVALENT CAPACITIES OF OTHER GASES AND/OR CUBIC METERS PER HOUR. EACH CURVE REPRESENTS A DIFFERENT BODY SIZE AS MARKED. ALL MEASUREMENTS MADE AT 1 PSIG (0,07 bar) RELIEF SET PRESSURE.

***Figure 3**. Typical Performance Curves for Standard Type 66R Relief Valve*



NOTE:
SEE "CAPACITY INFORMATION" SECTION FOR CONVERSION TO EQUIVALENT CAPACITIES OF OTHER GASES AND/OR CUBIC METERS PER HOUR. EACH CURVE REPRESENTS A DIFFERENT BODY SIZE AS MARKED. ALL MEASUREMENTS MADE AT 14-INCHES W.C. (35 mbar) RELIEF SET PRESSURE; ADDITIONALLY, TYPE 66RR MAIN VALVE SPRING SET AT 2-INCHES W.C. (5 mbar)

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***Figure 4**. Typical Performance Curves for NPS 4 (DN 100) Types 66R and 66RR Relief Valves*

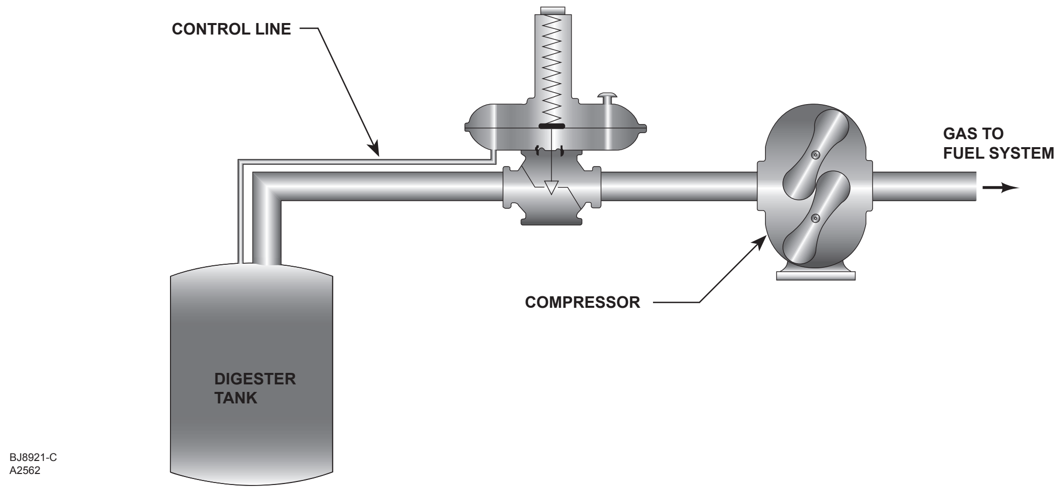


***Figure 5**. Type 66R Relief Valve Installation at Outlet of Sewage Treatment Plant Digester Tank*

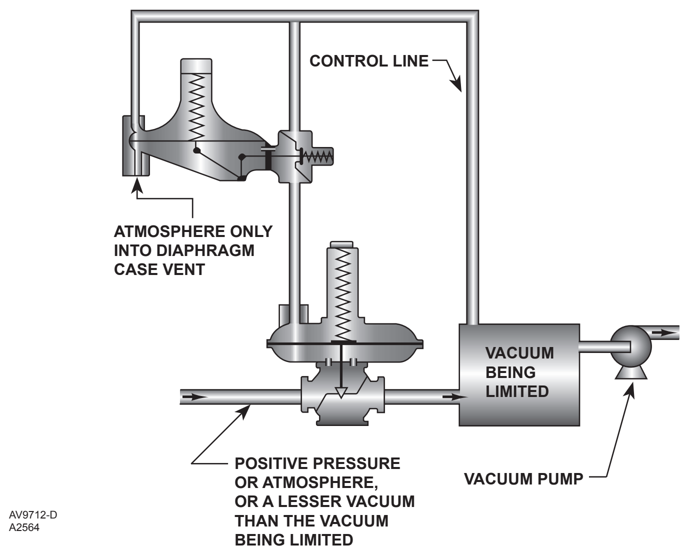


***Figure 6**. Type 66RR Relief Valve Installation in Vacuum Breaker System*

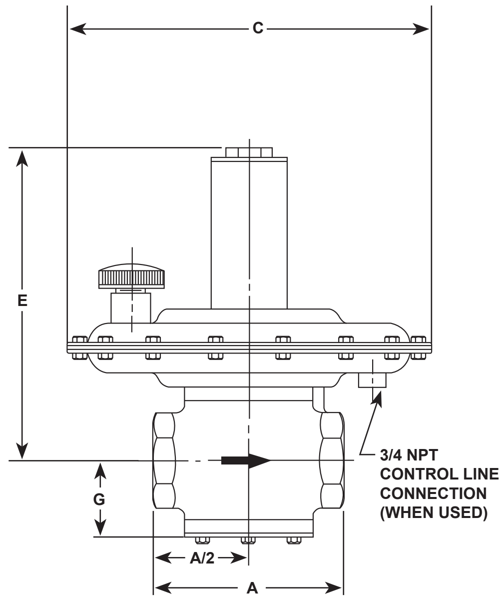
Installation

A Type 66R or 66RR relief valve should be installed horizontally with the diaphragm casings vertical above the body. Other orientations will change the relief set pressure and set pressure range due to the weight of the internal parts. Typical installations are shown in Figures 5 and 6.

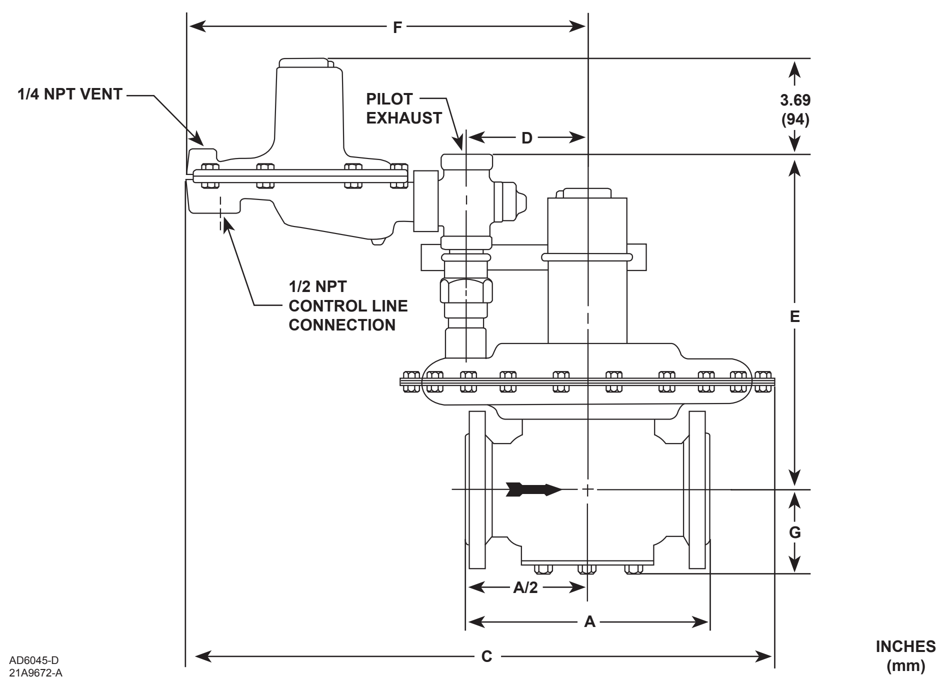
Connection locations and dimensions are both shown in Figure 7.

Capacity Information

Table 4 gives Type 66R and Table 5 gives Type 66RR flow capacities at selected set pressures. Flows are in SCFH (60°F and 14.7 psia) of 0.6 specific gravity natural gas at 60°F. To determine the equivalent capacities for air, propane, butane, or nitrogen, multiply the Table 4 or 5 capacity by the following appropriate conversion factor: 0.775 for air, 0.628 for propane, 0.548 for butane, or 0.789 for nitrogen. For gases of other specific gravities, multiply the given capacity by 0.775 and divide by the square root of the appropriate specific gravity. Then, if capacity is desired in normal cubic meters per hour (Nm^3/h) at 0°C and 1,01325 bar, multiply SCFH by 0.0268.



TYPE 66R



TYPE 66RR WITH TYPE Y695RR PILOT

BODY SIZE, NPS (DN)	A								C				D (TYPE 66RR ONLY)		E				F (TYPE 66RR ONLY)		G			
	NPT Cast Iron Body		NPT Steel Body		CL125 FF Cast Iron or CL150 RF Steel Body		CL300 RF Steel Body		Type 66R		Type 66RR				Type 66R		Type 66RR				NPT Steel Body		All Others	
	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm
2 (50)	7.25	184	9.25	235	10.00	254	10.50	267	13.88	353	22.12	562	4.50	114	11.75	298	12.69	322	15.19	386	3.31	84	3.25	83
3 (80)	....	....	....	....	11.75	298	....	....	16.00	406	24.19	614	5.50	140	13.00	330	14.12	359	16.19	411	....	....	4.62	117
4 (100)	....	....	....	....	13.88	353	....	....	18.00	457	25.94	659	6.25	159	15.88	403	15.25	387	16.94	430	....	....	5.38	137

***Figure 7**. Dimensions*

Ordering Information

When ordering, specify:

Application

1. Composition and specific gravity of gas (including chemical analysis if possible)
2. Range of temperatures, flowing inlet pressures (maximum, minimum, nominal), and pressure drops
3. Desired relief set pressure or set pressure range.
4. Range of flow rates (minimum controlled, maximum, normal)
5. Piping size(s)

Construction

Refer to the page 2 “Specification section” and to each referenced table; specify the desired selection whenever there is a choice to be made. Always be sure to specify the relief valve type number.

Ordering Guide

Type (Select One)

☐ 66R, maximum inlet pressure: 8 psig (0,55 bar)
☐ 66RR, maximum inlet pressure: 10 psig (0,69 bar)

Body Size (Select One)

☐ NPS 2 (DN 50)
☐ NPS 3 (DN 80)
☐ NPS 4 (DN 100)

Body Material and End Connection Style (Select One)

Cast Iron

☐ NPT - 2-inch only***
☐ CL125 FF***

Steel

☐ NPT - 2-inch only**
☐ CL150 RF**
☐ CL300 RF**
☐ PN 16/25/40**

Main Valve Diaphragm Case Material (Select One)

☐ Steel***
☐ 304 Stainless steel**

Main Valve Diaphragm, Valve Plug, and O-ring (Select One)

☐ Nitrile (NBR)***
☐ Flourocarbon (FKM)***

Optional Polytetrafluoroethylene (PTFE) Diaphragm Protector (Select)

☐ Yes***

Seat Ring Material (Select One)

☐ Bronze***
☐ 316*

Pilot Body Material (Select One for Type 66RR Only)

☐ Cast Iron***
☐ CF8M Stainless steel*

Pilot Diaphragm and Disk (Select One for Type 66RR Only)

☐ Nitrile (NBR)***
☐ Fluorocarbon (FKM)***

- continued -

Ordering Guide (continued)

Set Pressure Ranges (Select One)

Type 66R

☐ 2 to 8-inches w.c. (5 to 20 mbar)***
☐ 6 to 16-inches w.c. (15 to 40 mbar)***
☐ 11-inches w.c. to 1 psig (27 to 69 mbar)***
☐ 0.75 to 1.5 psig (52 to 103 mbar)***
☐ 1 to 2 psig (69 to 138 mbar)***
☐ 1.5 to 3 psig (103 to 207 mbar)***
☐ 3 to 5 psig (207 to 345 mbar)***

Type 66RR

☐ 4 to 9-inches w.c. (10 to 22 mbar), Red***
☐ 5 to 15-inches w.c. (12 to 37 mbar), Cadmium***
☐ 12 to 28-inches w.c. (30 to 70 mbar), Yellow***
☐ 0.9 to 2.5 psig (62 to 172 mbar), Light Green***
☐ 1.3 to 4.5 psig (90 to 310 mbar), Light Blue***
☐ 3.8 to 7 psig (262 to 483 mbar), Black***

Replacement Parts Kit (Optional)

☐ Yes, send one replacement parts kit to match this order.

Regulators Quick Order Guide	
***	Readily Available for Shipment
**	Allow Additional Time for Shipment
*	Special Order, Constructed from Non-Stoacked Parts. Consult your local Sales Office for Availability.
Availability of the product being ordered is determined by the component with the longest shipping time for the requested construction.	

Specification Worksheet

Application:
Specific Use: ______
Line Size ______
Gas Type and Specific Gravity ______
Gas Temperature ______

Relief Valve Size:
Brand of upstream regulator? ______
Orifice size of the upstream regulator? ______
Wide-open coefficient of the upstream regulator? ______

Pressure:
Maximum Inlet Pressure (P_{1max}) ______
maximum Inlet Pressure (P_{1min}) ______
Downstream Pressure Setting(s) (P_2) ______
Maximum Flow (Q_{max}) ______

Performance Required:
Accuracy Requirements? ______
Need for Extremely Fast Response? ______

Other requirements: ______

Industrial Regulators

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